

ONKYO SERVICE MANUAL

STEREO CASSETTE TAPE DECK MODEL TA-2800

Black model

UDN, UDC, UD	120V AC, 60Hz
UG	220V AC, 50Hz
UW	120 or 220V AC, 50/60Hz
UQA, UQB	240V AC, 50Hz

SPECIFICATIONS

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

Track Format:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow and Flutter:	0.04% (WRMS)
Frequency Response:	20-17,000Hz (Normal) (30-16,000Hz \pm 3dB) 20-18,000Hz (High) (30-17,000Hz \pm 3dB) 15-21,000Hz (Metal) (20-20,000Hz \pm 3dB)
S/N Ratio:	60dB (metal tape, Dolby NR off) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.
Input Jacks:	Line IN: 2 Input sensitivity: 60mV Input Impedance: 50kohms
Outputs:	Line OUT: 2 Standard output level: 1100mV (0dB) Optimum load impedance: over 50 kohms Headphone Jack: 1 Optimum load impedance: 8 to 200 ohms
Motors:	DC servo motor: 1 DC motor: 2
Heads:	REC/PB: Special Hard Permalloy x 1; Erase head: Ferrite x 1
Power Supply Rating:	U.K. and Australian models: AC 240V, 50Hz U.S.A. and Canadian models: AC 120V, 60Hz Worldwide models: AC 120V and 220V switchable, 50 / 60Hz
Power Consumption:	24 watts
Dimensions:	435(W) x 132(H) x 366(D)mm (17-1/8" x 5-3/16" x 14-7/16")
Weight:	6.2 kg. (13.7 lbs.)

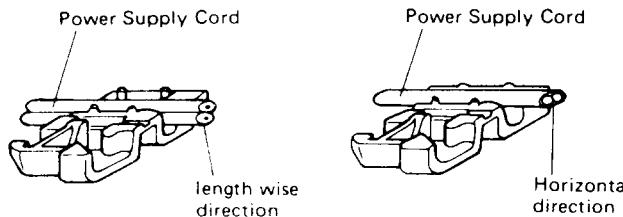
Specifications and external appearance are subject to change without notice because of product improvements.



SERVICE PROCEDURES

1. Replacement of power supply cord

There are two power supply cord outlets on the strainrelief. Insert them in prescribed direction to ensure safety. AS-UC-3 (UD<120V> model) should be inserted lengthwise and other types of cords should be inserted horizontally.



2. Insulating resistance measurement

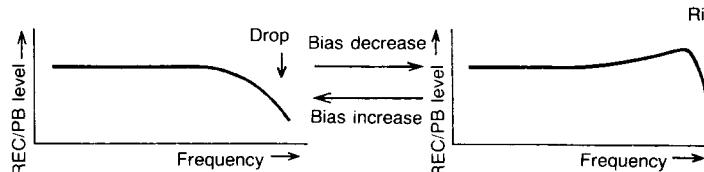
Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications: 500V more than 10MΩ

HX PRO CIRCUIT OPERATION EXPLANATION

1. Regarding recording frequency characteristic and bias

Ordinarily, if the recording bias current is increased, REC/PB frequency response level in the high frequency region (about 10KHz and above) drops, and if the bias is decreased, the response rises.



2. Regarding the basic operation of HX PRO (Refer to Fig. 1)

The HX PRO uses the μ PC1297CA IC. The operation is in accordance with the following.

- 1) At (a), the recording bias is added onto the audio signal, and the recording signal is detected. This is the same as the recording head recording the signal on the tape.
- 2) The signal of 1) preserves the frequency response with the integrated circuit of (b).

$$\text{Frequency} = \frac{R450 + R448}{2\pi \times C426 \times R450 \times R448} \quad (2.1)$$

By means of the frequency of Fig. 1, the frequency which is effective from the beginning is determined. In the ordinary situation, this is half the audio band (10KHz), (10KHz ~ 7.5KHz).

- 3) At (c), in order to use the affected waveform after-ward, absolute detection is carried out.

4) At (d), the waveform peak value is detected. The output becomes the peak DC voltage.

5) At (e), the standard voltage and the voltage of (4) are compared.

6) With the output of (e), the frequency generation level is controlled (voltage controlled amplifier). That is, the bias size is varied.

7) Summing up 1) ~ 6):

At (a), the time constant (frequency) that is detected in the recording signal is preserved, and above a certain frequency and above a certain level, the VCA controls the bias current by causing its reduction. When this is done, in the manner shown in the explanation of Item 1 above, the frequency high region is raised. With this control, the audio signal is instantaneously dealt with.

3. Regarding the operating conditions of the HX PRO

1) With equation (2. 1) noted above, the effect begins at the frequency thus determined.

2) Above a certain level the effect begins.
(Substantially 0 dB: In the vicinity of 500mV line out)
The audio signal component level is dependent upon the waveform after point (c).

HX PRO BLOCK DIAGRAM

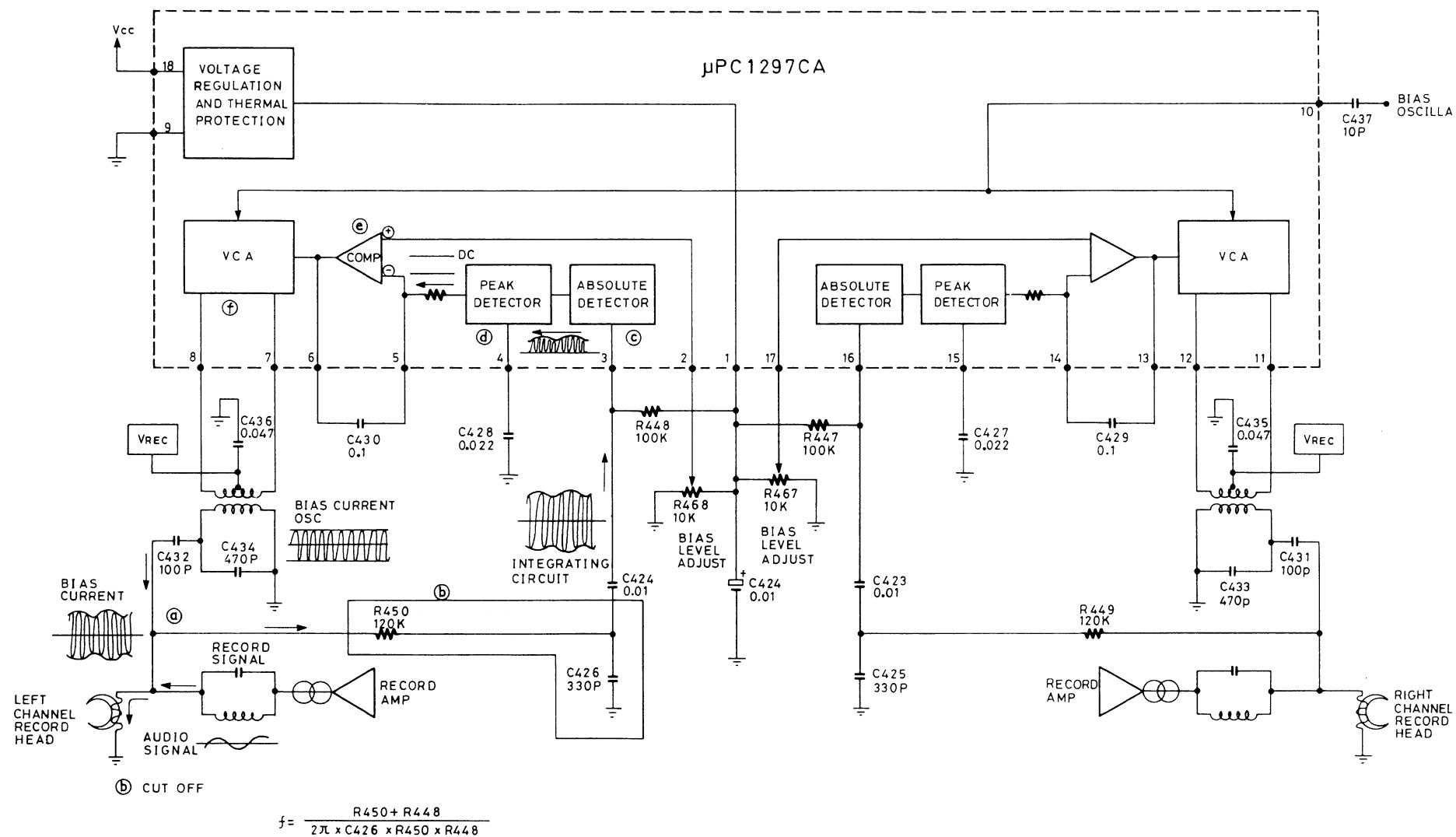
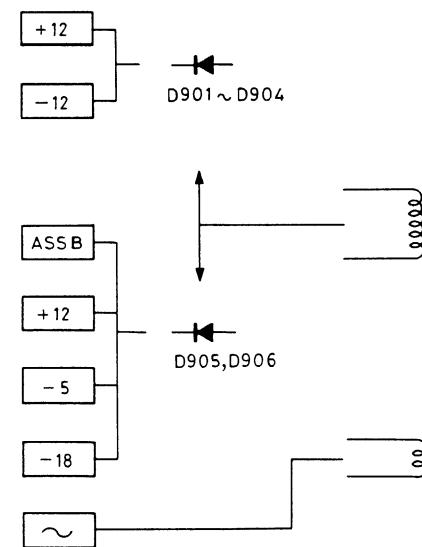
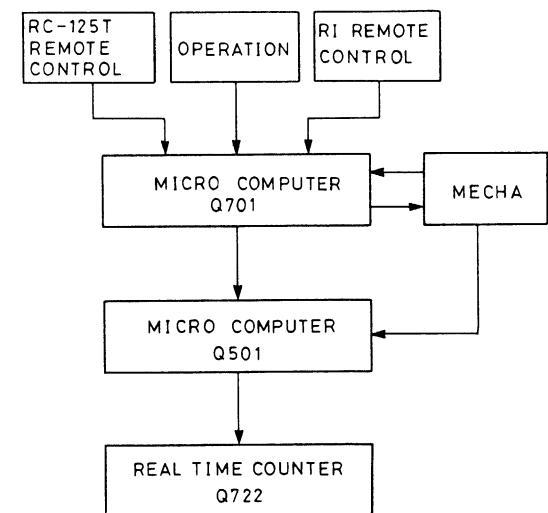
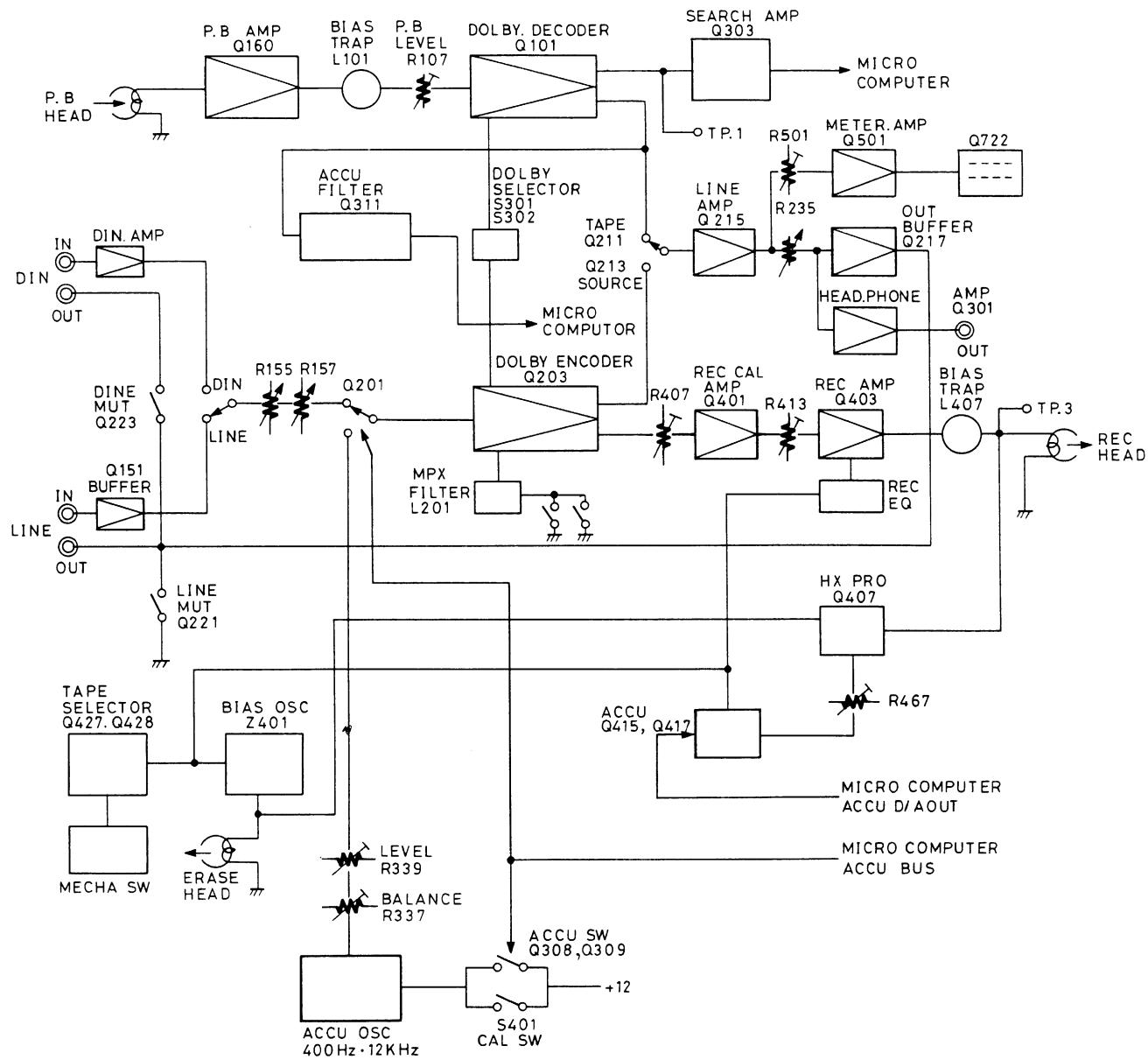
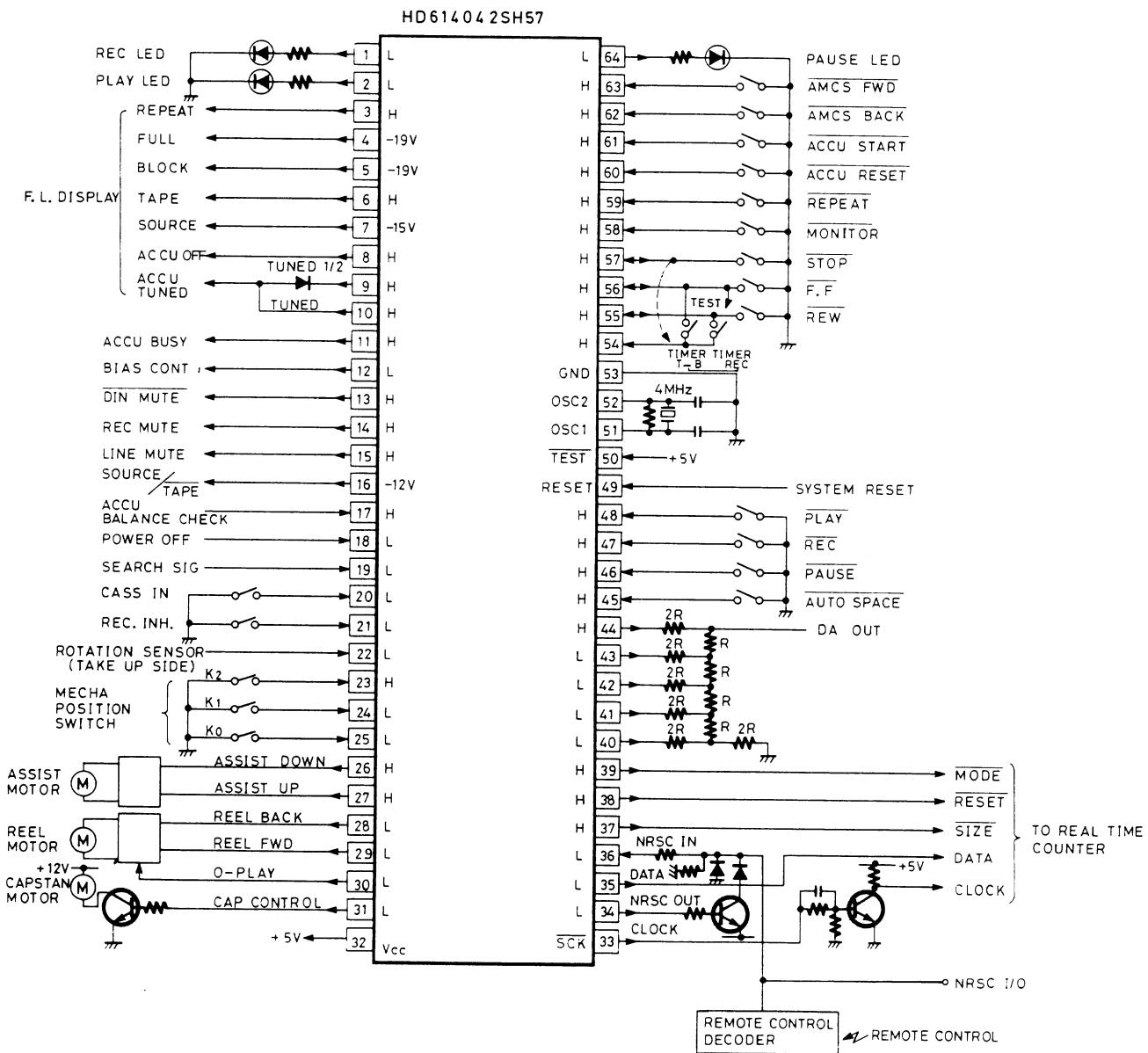


Fig. 1

BLOCK DIAGRAM



MICRO COMPUTER (HD614042SH57)

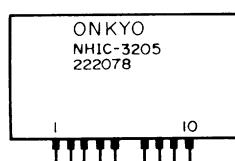
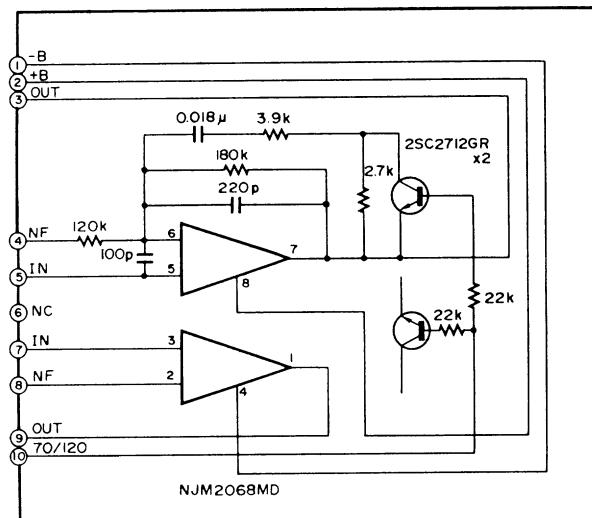


MECHANICAL POSITION CODE

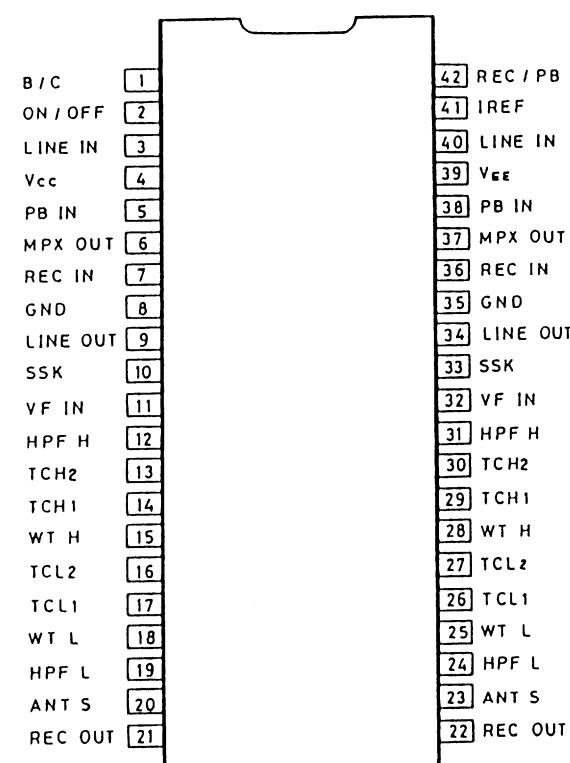
Q701 # 23	#24	#25	Mode
L	H	L	PLAY
L	L	H	PLAY → PAUSE
H	L	H	STOP
H	H	L	FF, REW

IC BLOCK DIAGRAM

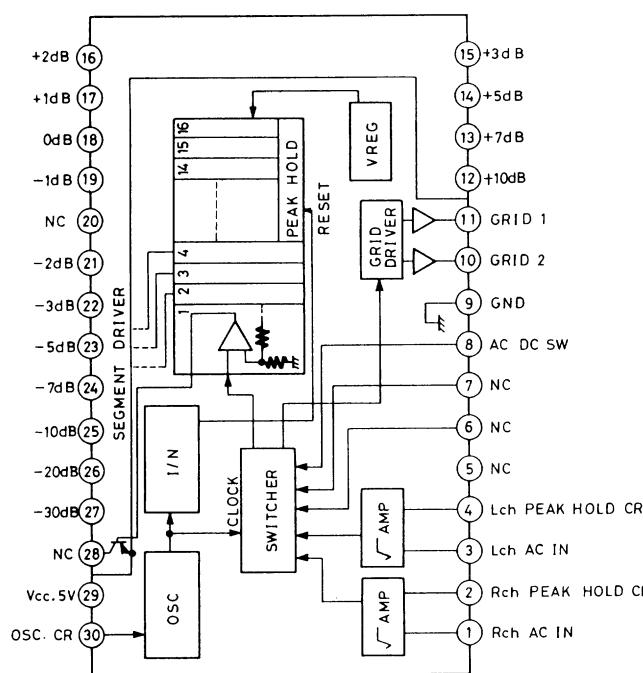
NCHC-3205 (P.B. AMP)



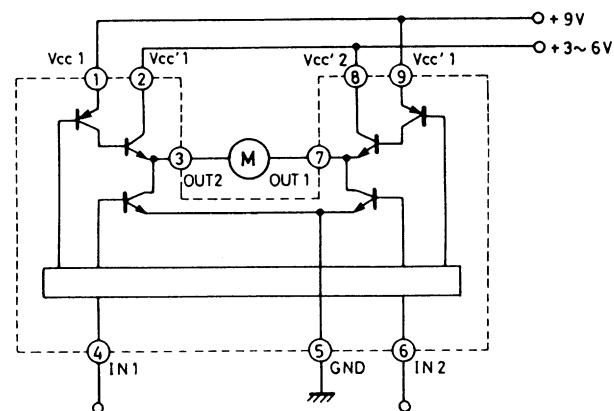
CX20187 (DOLBY N.R.)



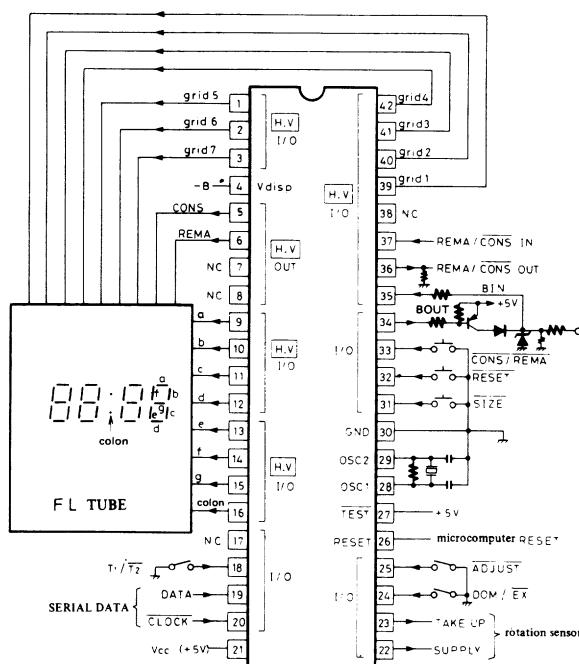
BA6800AS (METER DRIVE)



M54544AL (MOTOR DRIVE)



HD614128SA41 (COUNTER)



Terminal Name and Function

Pin No.	Name	Function
1 ~ 3	Grid 5 ~ 7	FL tube grid (DIGIT) drive use output
4	V _{disp}	Input (FL tube use) for minus bias voltage to pin Nos. 1 ~ 3, 5, 6, 9 ~ 16, 39 ~ 42
5	CONS	FL tube CONS display use output (time lapse)
6	REMA	FL tube REMA display use output (time remaining)
9 ~ 15	a ~ g	FL tube segment drive use output
16	Colon	FL tube ":" drive use output
18	T ₁ / T ₂	Microcomputer T ₁ / T ₂ function selection input (With T ₂ , system I/O receiving)
19	DATA	Deck mechanism status input (8 bit serial data) from mechanism control micro-computer
20	CLOCK	Clock input for reading above DATA (DATA taken on pulse wave dropping)
21	V _{cc}	Microcomputer power source (+5V)
22	SUPPLY	Cassette mechanism tape feed side turning pulse input
23	TAKE UP	Cassette mechanism tape windup side turning (pulse input)
24	DOM/EX	Domestic/export setting use selector input (Tape size type selector use) Domestic: With power ON C46 → C54 → C60 → C80 → C90 → C120
25	ADJUST	Remaining time calculation buffer compensating value input (normally open, compensating ground)
26	RESET	Microcomputer system reset
27	TEST	Microcomputer internal test use port, normally connected to V _{cc}
28, 29	OSC1, OSC2	Microcomputer clock oscillator terminal
30	GND	Microcomputer power source (GND)
31	SIZE	Tape size selector input
32	RESET	Lapsed time reset input (When CONS displays, digits are □ : □ □)
33	CONS/REMA	Lapsed time ← → remaining time selector input (toggle display)
34	BOUT	System bus output
35	BIN	System bus input
36	REMA/CONS OUT	Remaining time display/lapsed time display status output (when T ₂)
37	REMA/CONS IN	Remaining time display/lapsed time display status input (when T ₂)
39 ~ 42	Grid 1 ~ 4	FL tube grid (DIGIT) drive use output

ADJUSTMENT PROCEDURES

PRECAUTIONS

1. Before adjustment, clean the following parts with an alcohol moistened swab.

* record/playback head	* erase head
* pinch roller	* capstan
2. Do not use magnetized screwdriver for adjustments.
3. Demagnetize record/playback head with a head demagnetizer.

TEST EQUIPMENT/TOOLS REQUIRED:

Audio oscillator
 Digital frequency counter
 Oscilloscope
 Attenuator
 AC voltmeter
 Non-magnetic screw driver
 Test tapes
 VTT-658 : 10 KHz, -15dB
 MTT-111 : 3 kHz, -10dB
 MTT-150 : Dolby level calibration
 400Hz, tone 200nWb/m

Item		Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remarks
1	Tape speed	Frequency counter to LINE output terminal		MTT-111	PB	Frequency counter	Semi-fixed on the motor	3,005 to 3,010Hz	
2	Head azimuth	AC voltmeter and oscilloscope to LINE output terminal		VTT-658	PB	AC voltmeter	Head azimuth screw	Maximum and same phase at channels L and R	fig-1
3	Playback level	AC voltmeter to terminals TP-1 and TP-2		MTT-150	PB	AC voltmeter	R-107 (Ch.L) R-108 (Ch.R)	245mV	
4	Meter			MTT-150	PB	Level meter	R-501 (Ch.L) R-502 (Ch.R)	0dB	NADIS-3339
5	Bias trap	AC voltmeter to terminals TP-1 and TP-2		METAL TAPE	REC	AC voltmeter	L-101 (Ch.L) L-102 (Ch.R)	Minimun	
6	HX-PRO	AC voltmeter to terminals TP-3 and TP-4		METAL TAPE	REC	AC voltmeter	L-409 (Ch.L) L-410 (Ch.R)	Maximum	R-467 R-468 counter clock wise
7	Bias current	AC voltmeter to LINE output terminal	1kHz, -20dB and 12kHz, -20dB	NEW XL-II90	REC/PB	AC voltmeter	R-467 (Ch.L) R-468 (Ch.R)	Same level at REC/PB	Input VR maximum
8	Record level	fig-2	1kHz		REC	AC voltmeter	Attenuator or AF OSC output	350mV	Input VR maximum
					REC/PB	AC voltmeter	R-413 (Ch.L) R-414 (Ch.R)	Same level at REC/PB	
9	ACCU OSC signal	Oscilloscope to TP-5 (NCAF-3344)				Oscilloscope	R-337 (NCAF-3344)	Same level at 400Hz/12kHz fig-3	REC CAL SW ON
							R-339 (NCAF-3344)	30mVpp fig-3	

PLAY torque 35~70g/cm
 FF, REW torque 70g/cm
 Back tension 6~10g/cm

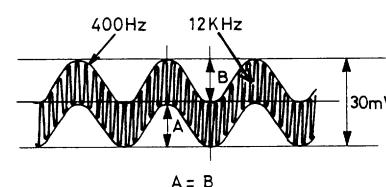
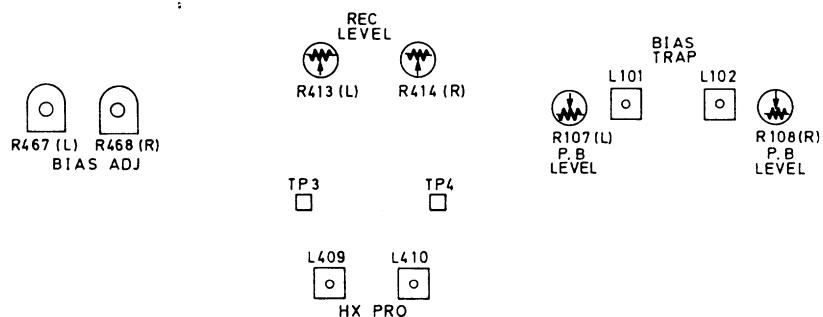


fig-3

NCAF - 3334

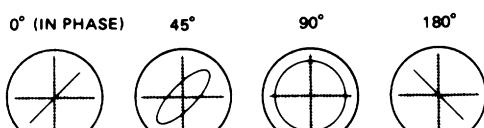
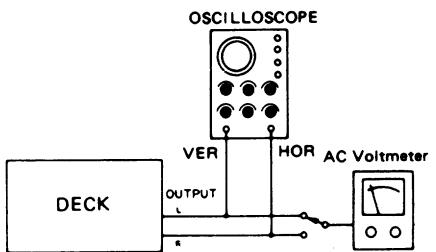
TP1 TP2



NCAF-3344

TP-5
 R337 400Hz LEVEL
 R339 12KHz BALANCE

NCDIS-3339



Confirming phase relationship

fig-1

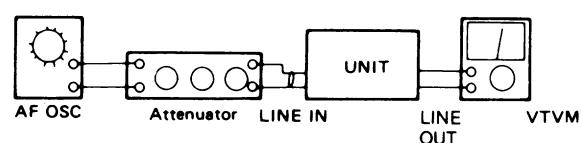
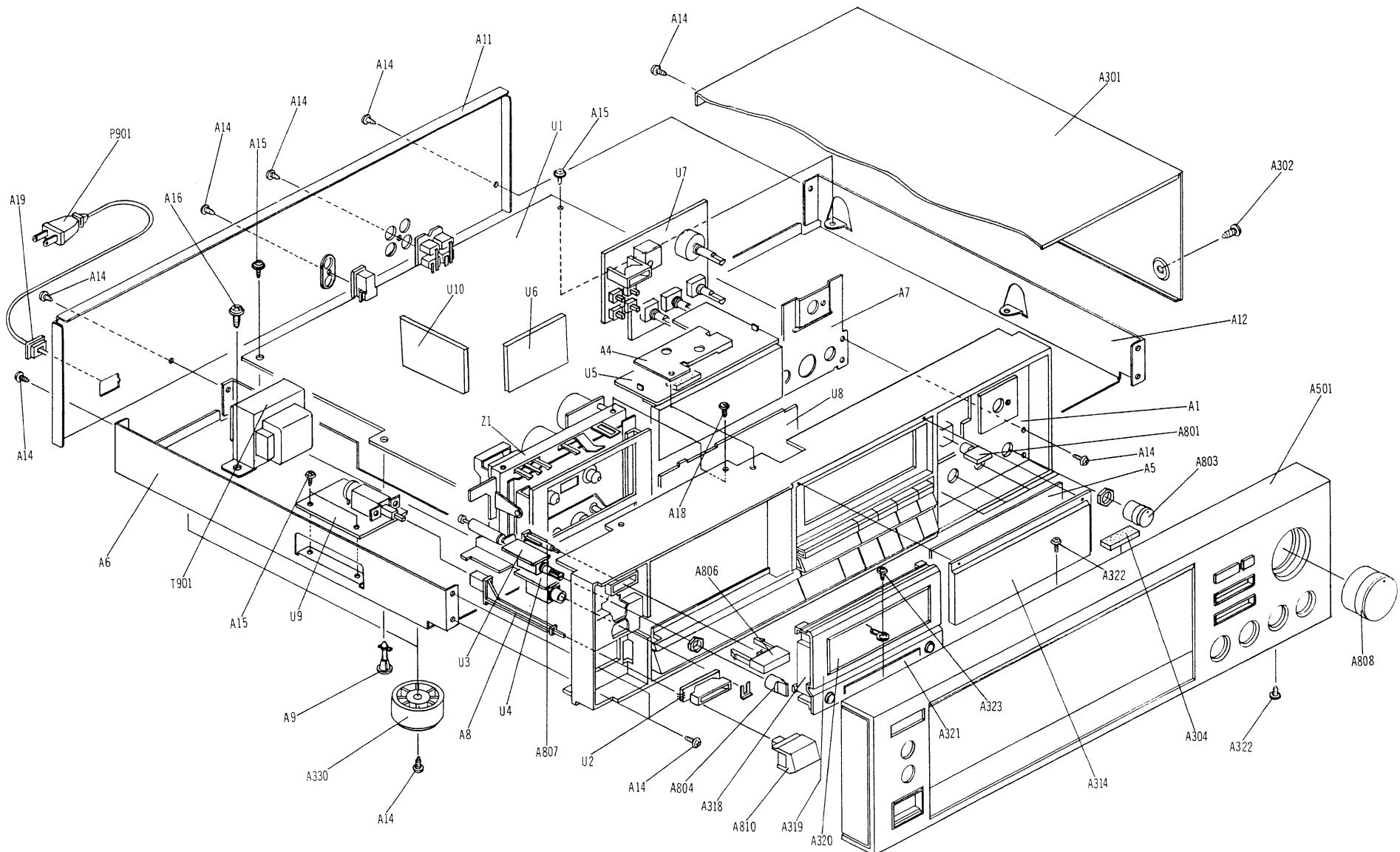


fig-2

CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW PARTS LIST

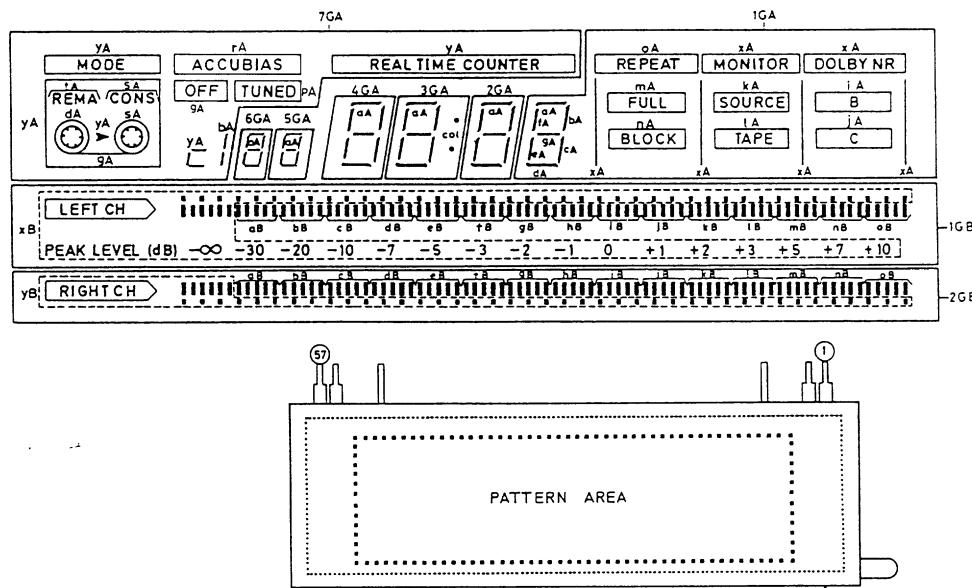
REF.NO.	PART NO.	DESCRIPTION
A1	27110430C	FRONT BRACKET AS
A4	27141273	BRACKET (PC)
A5	28133200	BACK PLATE <i>CR033</i>
A6	27130536A	BRACKET (PT)
A7	27130541A	BRACKET (VOL)
A8	27273069A	JOINT (POW)
A9	27190524	HOLDER
A11	27121146A	BACK PANEL (D)
	27121147	BACK PANEL (G)
	27121148	BACK PANEL (W)
	27121181	BACK PANEL (Q)
A12	27100164B	CHASSIS
A14	834430088	TAP-TIGHT SCREW 3TT+S8B(BC)
A15	831130088	TAP-TIGHT SCREW 3TTW+S8B
A16	830440109	TAP-TIGHT SCREW 4TTC+10C(BC)
A18	838426088	TAP-TIGHT SCREW 2.6TTB+S8B
A19	27300750	BUSHING (CORD)
A20	28140877	CUSHION
A21	28140881	CUSHION
A24	27141284	BRACKET(ST)
A25	880009	NRP-345,RIVET
A26	27270272	SPACER
A301	28184397	TOP COVER
A302	838440089	TAP-TIGHT SCREW 4TTB+8C(BC)
A304	28140408	CUSHION
A314	28191469	CLEAR PLATE
A318	27301123A	CASSETTE LID
A319	27301122	CASSETTE LID (AL)
A320	28400413	WINDOW
A321	28135156	BADGE
A322	833430080	TAP-TIGHT SCREW 3TTP+8P(BC)
A323	834230108	TAP-TIGHT SCREW 3TT+S10B(Ni)
A330	27175153	LEG
A501	1N049121	FRONT PANEL ASS'Y
-a	28125194-1	END CAP(L)
-b	28125195-1	END CAP(R)
-c	27267555	GUIDE(VOL)
-d	28194297	COSMETIC BAR
-e	27267481B	GUIDE(POW)
-f	28198670	FACET(POW)
-g	28191475	CLEAR PLATE (RE)
A801	28323388A	KNOB(PUSH)
A803	28323389	KNOB(BAL)
A804	28323410	KNOB(SEL)
A806	28323287	KNOB(EJECT)
A807	27260279	SHAFT(EJ)
A808	28323395	KNOB(LEV)
A810	28323175	KNOB(POW)
P901	253112A	ACCORD AS-UC-4(D)(PX)
	253149	ACCORD AS-CEE (G/W)
	253104	ACCORD C2.5BS2 (Q)

REF.NO.	PART NO.	DESCRIPTION
▲ S902	25065123	NSS-1258P (W)
▲ T901	2300335	NPT-1003D (D)
	2300336	NPT-1003G (G)
	2300337	NPT-1003DG (W)
	2300359	NPT-1003Q (Q)
U1	1N048534-2	NAAF-3334-2 (D/W/Q)
	1N048534-2A	NAAF-3334-2A (G)
U2	1N048536-2	NADIS-3336-2
U3	1N048537-2	NASW-3337-2
U4	1N048538-2	NAETC-3338-2
U5	1N048539-2	NADIS-3339-2
U6	1N048540-2	NAAF-3340-2
U7	1N048545-2	NAAF-3345-1
U8	1N048542-1	NASW-3342-2
U9	1N048543-2	NASW-3343-2
U10	1N048544-2	NAAF-3344-1
Z1	244116	NDM-108, CASSETTE DECK MECHANISM

NOTE:
 <D>:Only 120V model
 <G>:Only 220V model
 <W>:Only Worldwide model
 <Q>:Only 240V model
 <PX>:Only P.X. model

NOTE: THE COMPONENTS IDENTIFIED BY MARK **▲** ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

BG-555G (DISPLAY TUBE)



PIN CONNECTION

Resistor		NASW-3342-2		
CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.
R501, R502	5215020	NO8HR5KBC		
R509	49163104415	100k×15, 1/10W		
			LED	
P501A	2000879	NSAS-8P835	D708, D709	225141
P703	25055226	NPLG-4P210	D710	225137CG, 225137DG or 225137DY
P705A	2000757	NSAS-10P713		SEL2213C SEL2413CG, SEL2413DG or SEL2413DY
P706A	2000649	NSAS-10P605		
P707	25055225	NPLG-3P209		
P708A	2000884	NSAS-14P840		
			Switch	
			S701-S710	25035548
		Bracket	S712-S717	25035548
	27130539A	BRACKET(FL)		
			Socket	
NAAF-3340-2			P701A	2000883
			P702A	2000818
			P703A	2000665
			P704A	2000571
				NSAS-18P839 NSAS-14P774 NSAS-8P621 NSAS-8P527
CIRCUIT NO.	PART NO.	DESCRIPTION		
			Transistor	
Q409-Q414	2211255 or 2210746	2SC1815GR or 2SC945A-P		
				Holder
				27190649
				HOLDER(LED3)
			NASW-3343-2	
			CIRCUIT NO.	PART NO.
L401, L402	233194 or 231089	NCH-1039 or NCH-2137		
L403, L404	24606069 or 231084	NCH-1007 or NCH-2132	C901	3500065A
L405, L406	24606080 or 231083	NCH-1022 or NCH-2131	S901	25035558 25060092
				0.01μ, AC400V, CAPACITOR NPS-111-L520P, PUSH NMT-1S33, TERMINAL
			Plug	
P403	25055317	NPLG-3P300		
P404	25055319	NPLG-5P302		
			NASF-3344-1	
CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.
NAAF-3345-1			Ic	
			Q311	222681 or 22240040
				IR3702 or NJM2902N
CIRCUIT NO.	PART NO.	DESCRIPTION		
			Transistor	
Q750	24130001	GP1U501S	Q306, Q307	2211255 or 2210746
Q751	221281	DTC114YS		2SC1815GR or 2SC945A-P
D311	225137CG, 225137DG or 225137DY	SEL2413CG, SEL2413DG or SEL2413DY	Q321	2211255 or 2210746
				2SC1815GR or 2SC945A-P
			Diode	
R155	5104239	N12RGLC5KMN25Z	D304-D307	223132
R157	5104241	N16RGL5KA25Z	D308	223163
R235	5104238	N12RGL5KA25Z	D309	224450511, 224150511 or 224650511
R407, R408	5104240	N12RGLC5KB25Z		1K60 1SS133 MTZ5.1B, 05AZ5.1Y or HZ5.1EB2
			Switch	
S301-S303	25035514	NPS-122-L476, PUSH	C310	354780339
S401	25035515	NPS-142-L477, PUSH	C311	354741009
			C315-317	354741009.
			C320	354780479
			C321	354742209
			C324	354784799
			C325	354741009
				4.7μF50V, ELECT. 22μF16V, ELECT. 0.47μF50V, ELECT. 10μF16V, ELECT.
			Socket	
P107A	2000877A	NSAS-6P833		
P108A	2000876A	NSAS-6P832		
P201A	2000886	NSAS-12P842		
P307A	2000776	NSAS-10P732		
P401A	2000887	NSAS-12P843		
P402A	2000885	NSAS-10P841	R337	5215036
P707A	2000875	NSAS-6P831	R339	5215031
P711A	2000490	NSAS-6P446		
				N08HR100KBA N08HR1KBA
			Resistor	
			Capacitor	
			Holder	
			P305	25055318
			P306	25055319
				NPLG-4P301 NPLG-5P302

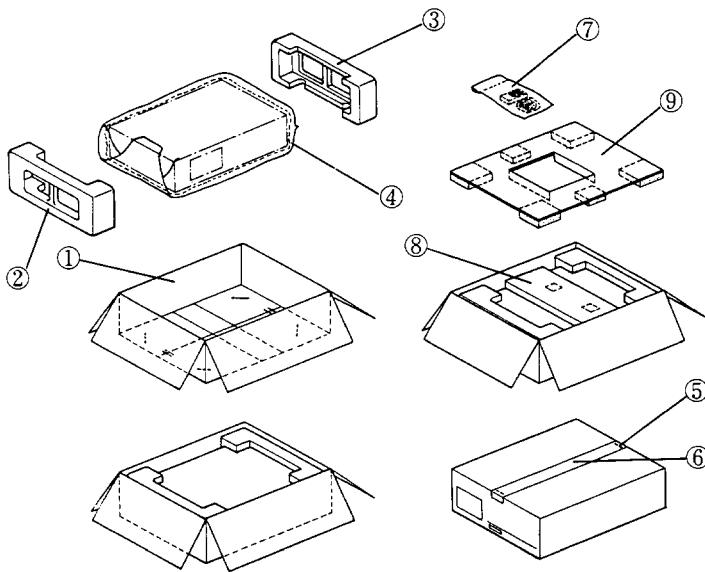
PC BOARD PARTS LIST

NAAF-3334-2

CIRCUIT NO.	PART NO.	DESCRIPTION			
Ics					
Q101	222999	CX-20187	Q707	221281	DTC114YS
Q151	222502	NJM-4558DX	Q708	2201540	2SD947
Q160	222078	NHIC-3205	Q710	2201540	2SD947
Q201	222840661 or 222933	4066B or BU-4066B	Q711	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q203	222999	CX-20187	Q712	2213090	DTA114YS
Q215	222502	NJM-4558DX	Q713	2211455 or 2212495	2SA1015-GR or JA101Q
Q217	222921 or 222465	BA4558 or NJM-4558D	Q714	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q301	22240111 or 222808	BA15218 or M5218P	Q715	221282	DTC144ES
Q303	222940	BA335H	Q716	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q401	222502	NJM-4558DX	Q717	221282	DTC144ES
Q403	22240111 or 222808	BA15218 or M5218P	Q718	2213090	DTA114YS
Q407	222959	μ PC1297CA	Q903	2211455 or 2212495	2SA1015-GR or JA101Q
Q415, Q417	222921 or 222465	BA4558 or NJM-4558D	Q904	2201924 or 2201385	2SD1761-E or 2SD330-E
Q701	<u>22240169</u>	HD614042SH57	Q905	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q702	22240156	LC6527H-3659			
Q706, Q709	222953	M-54544AL			
Q901, Q902	222780125MIT	78M12			
Q906	222780055MIT	78M05			
Transistors					
Q103	2211255 or 2210746	2SC1815-GR or 2SC945-AP	D101, D102	224450822, 224150822 or 224650822	MTZ8.2B, 05AZ8.2Y or HZ8.2EB2
Q104	2211455 or 2212495	2SA1015-GR or JA101Q	D151-D154	223163	ISS133
Q153, Q154	2211406 or 2211896	2SC2240-BL or 2SC1815LL	D201, D202	224450822, 224150822 or 224650822	MTZ8.2B, 05AZ8.2Y or HZ8.2EB2
Q155, Q156	2211455 or 2212495	2SA1015-GR or JA101Q	D205, D206	223163	ISS133 (G)
Q205-Q209	2211255 or 2210746	2SC1815-GR or 2SC945-AP	D207-D211	223163	ISS133
Q210	2211455 or 2212495	2SA1015-GR or JA101Q	D301, D302	223163	ISS133
Q211-Q214	2212304 or 2211945	2SK381-D or 2SK246-GR	D310	223163	ISS133
Q219, Q220	2211255 or 2210746	2SC1815-GR or 2SC945-AP	D401	223163	ISS133
Q221, Q222	2211706	2SD655-F	D404-D409	223163	ISS133
Q223, Q224	2212304 or 2211945	2SK381-D or 2SK246-GR	D701	224451002, 224151002 or 224651002	MTZ10B, 05AZ10Y or HZ10EB2
Q225, Q226	221281	DTC114YS	D702	224451003, 224151003 or 224651003	MTZ10C, 05AZ10Z or HZ10EB3
Q227	2211455 or 2212495	2SA1015-GR or JA101Q	D703	224450562, 224150562 or 224650562	MTZ5.6B, 05AZ5.6Y or HZ-5.6E-B2
Q304	221282	DTC144ES	D704-D707	223163	ISS133
Q305	2211255 or 2210746	2SC1815-GR or 2SC945-AP	D901-D906	22380006 or 223894	1N4003 or 1N4002F
Q308	2213090	DTA114YS	D907	224452001, 224152001 or 224652001	MTZ20A, 05AZ20X or HZ20EB1
Q309	221282	DTC144ES	D908	224450511, 224150511 or 224650511	MTZ5.1A, 05AZ5.1X or HZ5.1EB1
Q315	221282	DTC144ES	D909	22380006 or 223894	1N4003 or 1N4002F
Q405, Q406	2212794 or 2212795	2SD1468-R or 2SD1468-S	D910	224451501, 224151501 or 224651501	MTZ15A, 05AZ15X or HZ15EB1
Q419-Q421	221282	DTC144ES	D911, D912	223163	ISS133
Q422	2211455 or 2212495	2SA1015-GR or JA101Q			
Q423, Q424	221282	DTC144ES			
Q425	2201540	2SD947			
Q426-Q428	2211455 or 2212495	2SA1015-GR or JA101Q			
Q703	2213090	DTA114YS			
Q704	221281	DTC114YS			
Q705	2201385	2SD330-E			
Coils					
			L101, L102	231147	NCH-4199
			L103, L104	233382	NMC-2069
			L201, L202	233328	NMC-6051
			L203, L204	233382	NMC-2069
			L407, L408	231101	NCH-2148
			L409, L410	231100	NCH-4147
			L411, L412	231077	NCH-2125
OSC Block					
			Z401	231149	NOB-038

X701	Ceramic OSC	R905 R908 R909	442520224 441724704 442520104	RS1/2WBJ 2.2Ω RS 2 WBJ 47Ω RS1/2WBJ 1.0Ω
	3010099 or 3010128		CSA-4.00MG or PRS-4.00RM11	
Capacitors				
C103, C104	354722219	220μF6.3V, ELECT.	P101	25055134
C105, C106	354741009	10μF16V, ELECT.	P103	25045208
C107, C108	354741009	10μF16V, ELECT.	P105	25050064
C115, C116	354744719	470μF16V, ELECT.	P107, P108	25055147
C139, C140	354741009	10μF16V, ELECT.	P201L, P201R	25055147
C141, C142	354741019	100μF16V, ELECT.	P303A	2000878
C143, C144	354742219	220μF16V, ELECT.	P307	25055186
C147	354742209	22μF16V, ELECT.	P401L, P401R	25055147
C151, C152	392880107	1μF50V, LL.	P402	25055186
C153, C154	392880107	1μF50V, LL. (G)	P405	25055134
C155, C156	354782299	0.22μF50V, ELECT. (G)	P407	25055132
C157, C158	354741019	100μF16V, ELECT. (G)	P501L, P502R	25055146
C163, C164	354780479	4.7μF50V, ELECT.	P701	25055190
C201, C202	354780479	4.7μF50V, ELECT.	P702	25055188
C203, C204	352950476	4.7μF25V, NP.	P704	25055185
C229, C230	354741009	10μF16V, ELECT.	P705, P706	25055149
C231, C232	354741009	10μF16V, ELECT.	P708	25055151
C233, C234	354741019	100μF16V, ELECT.	P709	25055139
C235, C236	354742219	220μF16V, ELECT.	P710	25055140
C237	354780479	4.7μF50V, ELECT.	P711	25055184
C241, C242	354741009	10μF16V, ELECT.	P712	25045172
C245	354780229	2.2μF50V, ELECT.		HSJ-1003-01-020
C246	354744709	47μF16V, ELECT.		
C247, C248	354780479	4.7μF50V, ELECT.	27160211-1	RAD-68B, RADIATOR
C249	354741009	10μF16V, ELECT.	27160227	RAD-076, RADIATOR
C251, C252	354741009	10μF16V, ELECT.	27160211	RAD-68, RADIATOR
C301, C302	354741009	10μF16V, ELECT.	82143006	3P+6FN(BC), SCREW
C303	354780229	2.2μF50V, ELECT.		
C305	354782299	0.22μF50V, ELECT.		
C306	354784799	0.47μF50V, ELECT.		
C327	354780479	4.7μF50V, ELECT.		
C328	354741009	10μF16V, ELECT.		
C401, C402	354741009	10μF16V, ELECT.	D913, D914	225142 27190499A
C403, C404	354780479	4.7μF50V, ELECT.		SEL2913K, LED HOLDER(LED), POW
C405, C406	354782299	0.22μF50V, ELECT.		
C407, C408	354780479	4.7μF50V, ELECT.		
C431, C432	370131014S	100PF 100V, APS		
C433, C434	370134714S	470PF 100V, APS		
C438, C439	354741009	10μF16V, ELECT.		
C440, C441	354722219S	220μF3.6V, ELECT.		
C442-C444	354780479	4.7μF50V, ELECT.		
C708	354780479	4.7μF50V, ELECT.		
C712	354784799	0.47μF50V, ELECT.		
C716	354741009	10μF16V, ELECT.		
C902, C903	354752229S	2200μF25V, ELECT.		
C904, C905	354784799	0.47μF50V, ELECT.		
C906, C907	354780479	4.7μF50V, ELECT.		
C908	354751029S	1000μF25V, ELECT.		
C909	354741019	100μF16V, ELECT.		
C910	354744709	47μF16V, ELECT.		
C911	3504168	13000μF25V, ELECT.		
C912, C913	354784799	0.47μF50V, ELECT.		
C914	354780479	4.7μF50V, ELECT.		
Resistors				
R107, R108	5210062	N06HR 4.7KBD		
R413, R414	5210062	N06HR 4.7KBD		
R467, R468	5215045 or 5215021	N08HR 10KBC or N08HR 10KBC	Q503, Q504 Q723, Q724	2213090 2211255 or 2210746
R473	442525604	RS1/2WBJ 56Ω		
R476	442525604	RS1/2WBJ 56Ω		
R704	49163104407	100kΩ×7, 1/10W, NETWORK		
R707	49163392405	3.9kΩ×5, 1/10W, NETWORK		
R710	441722704	RS 2 WBJ 27Ω		
R737	49163392407	3.9kΩ×7, 1/10W, NETWORK		
R738	49163392409	3.9kΩ×9, 1/10W, NETWORK		
R903, R904	442522294	RS1/2WBJ 0.22Ω		
Capacitors				
Plugs				
P101	25055134	NPLG-4P118		
P103	25045208	NPJ-4PDBL88		
P105	25050064	NSCT-5P18, DIN SOCKET (G)		
P107, P108	25055147	NPLG-3P131		
P201L, P201R	25055147	NPLG-3P131		
P303A	2000878	NSAS-6P834, SOCKET		
P307	25055186	NPLG-5P170		
P401L, P401R	25055147	NPLG-3P131		
P402	25055186	NPLG-5P170		
P405	25055134	NPLG-4P118		
P407	25055132	NPLG-2P116		
P501L, P502R	25055146	NPLG-2P130		
P701	25055190	NPLG-9P174		
P702	25055188	NPLG-7P172		
P704	25055185	NPLG-4P169		
P705, P706	25055149	NPLG-5P133		
P708	25055151	NPLG-7P135		
P709	25055139	NPLG-9P123		
P710	25055140	NPLG-10P124		
P711	25055184	NPLG-3P168		
P712	25045172	HSJ-1003-01-020		
Miscellaneous				
	27160211-1	RAD-68B, RADIATOR		
	27160227	RAD-076, RADIATOR		
	27160211	RAD-68, RADIATOR		
	82143006	3P+6FN(BC), SCREW		
NADIS-3336-2				
CIRCUIT NO.		PART NO.	DESCRIPTION	
D913, D914	225142 27190499A		SEL2913K, LED HOLDER(LED), POW	
NASW-3337-2				
CIRCUIT NO.		PART NO.	DESCRIPTION	
S721	25030305		NRS-123-15MP, TIMER SWITCH	
NAETC-3338-2				
CIRCUIT NO.		PART NO.	DESCRIPTION	
P301	25045139		HLJ0504-01-010	
NADIS-3339-2				
CIRCUIT NO.		PART NO.	DESCRIPTION	
IC				
Q501	22240170		BA6800AS	
Q720	22240084		HD614128SA41	
Display tube				
Q722	212057		BG-545G	
Transistor				
Ceramic OSC		PART NO.	DESCRIPTION	
X702	3010118 or 3010129		CSA3.00MG or PRS-3.00RM03	
Capacitor				
C501, C502	354741009		10μF16V, ELECT.	
C503, C504	354742209		22μF16V, ELECT.	
C720	354741009		10μF16V, ELECT.	

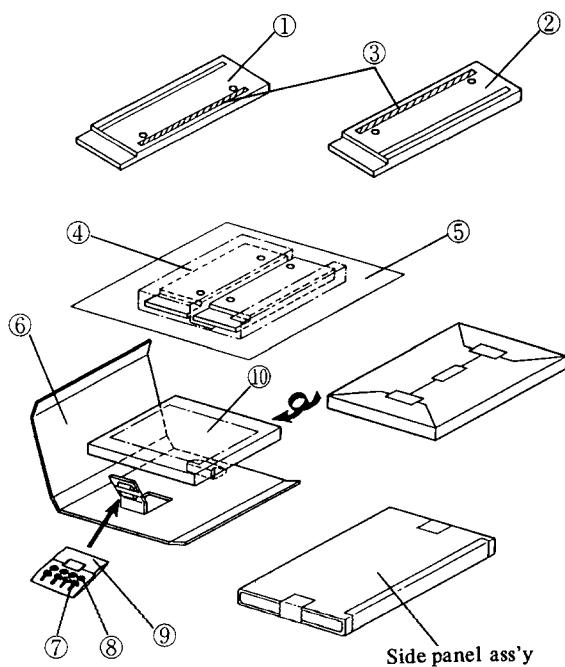
PACKING VIEW



D MODEL

REF.NO.	PART NO.	DESCRIPTION
1	29051727	Master carton box
2	29051751A	Master carton box (PX)
3	29091264A	Pad (L)
4	29091265A	Pad (R)
5	29100105	550×680 Poly bag
6	29095012-1	500×800 Protection sheet (PX)
7	282301	Sealing hook
8	260012	Damplon tape
9	Accessory bag ass'y	
	29341290	Instruction manual
	2010098A	Connection cable
	29365019	Waranty card (N)
	29358002F	Service station list (N)
	25055251	Conversion plug (CV-CP) (PX)
	29100006A	350×250 Poly bag
	24140027	Remote control unit
	3010124	Battery UM-4
	28185315-1	Side panel ass'y (PX)
	29091298	Pad (PX)

Only P.X. model



G/W MODEL

REF.NO.	PART NO.	DESCRIPTION
1	29051727	Master carton box
2	29051751A	Master carton box (PX)
3	29091264A	Pad (L)
4	29091265A	Pad (R)
5	29100105	550×680 Poly bag
6	2905012-1	500×800 Protection sheet (PX)
7	282301	Sealing hook
8	260012	Damplon tape
9	Accessory bag ass'y	
	29341289	Instruction manual
	29341292	Instruction manual (I)
	29365021	Waranty card (PX)
	29365022	Waranty card (QB)
	2010095	Connection cable
	25055018	Conversion plug (CV-K-2) (W)
	25055251	Conversion plug (CV-CP) (PX)
	29100006A	350×250 Poly bag
	24140027	Remote control unit
	3010124	Battery UM-4
	28185315-1	Side panel ass'y (PX)
	29091298	Pad (PX)

PX MODEL

REF.NO.	PART NO.	DESCRIPTION
1	28185344	Side panel (L)
2	28185345	Side panel (R)
3	28140887	Cushion
4	29095539	Protection sheet
5	29095039-1	Protection sheet
6	29051732	Carton box
7	836440303	4STV+30CQ (BC) Screw
8	870086	4×12BS (BC) Washer
9	29100026	150×80 Poly bag
10	29341018-1	Instruction manual

NOTE (D): Only 120V model

(G): Only 220V model

(W): Only Worldwide model

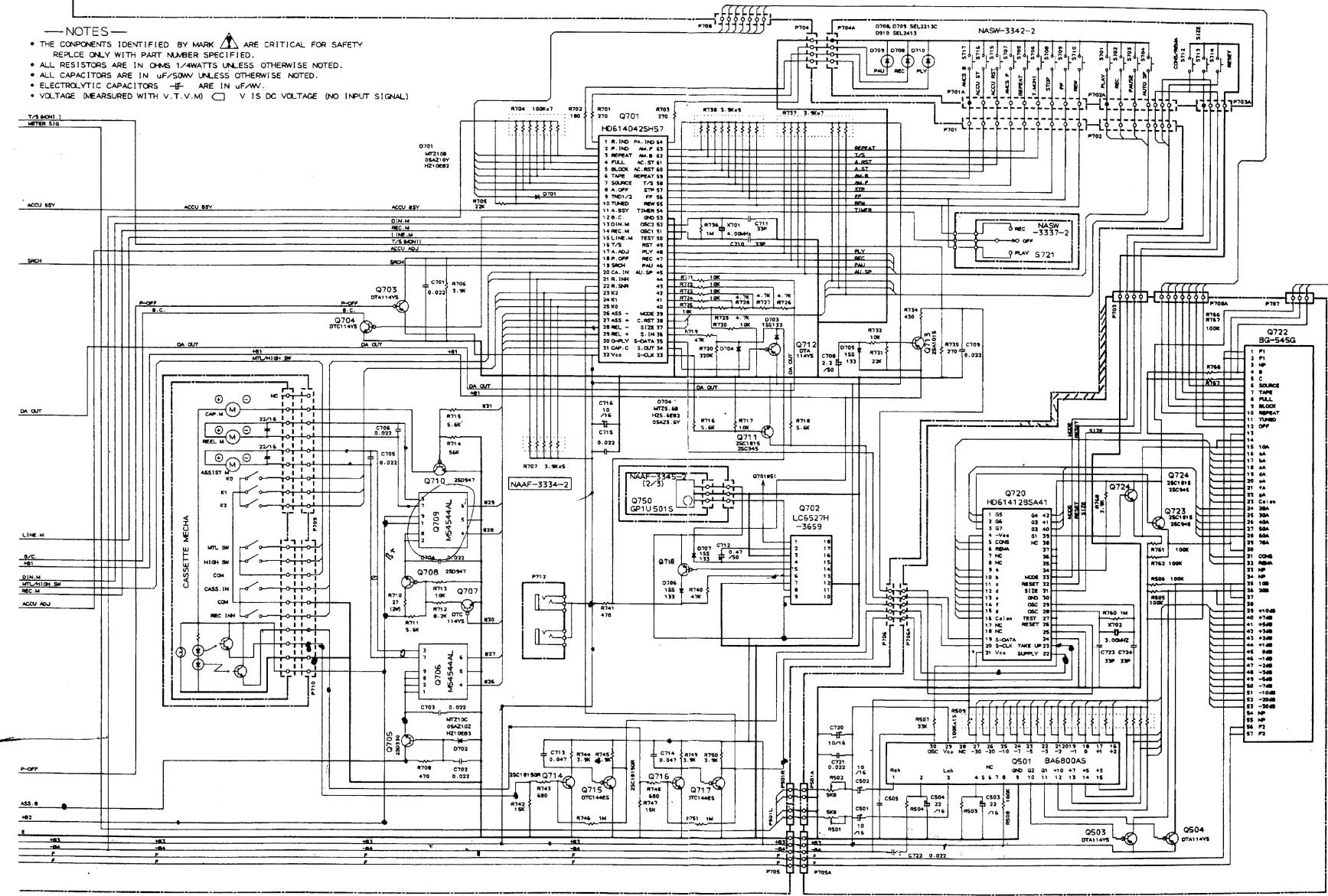
(PX): Only P.X model

A B C D E F G H

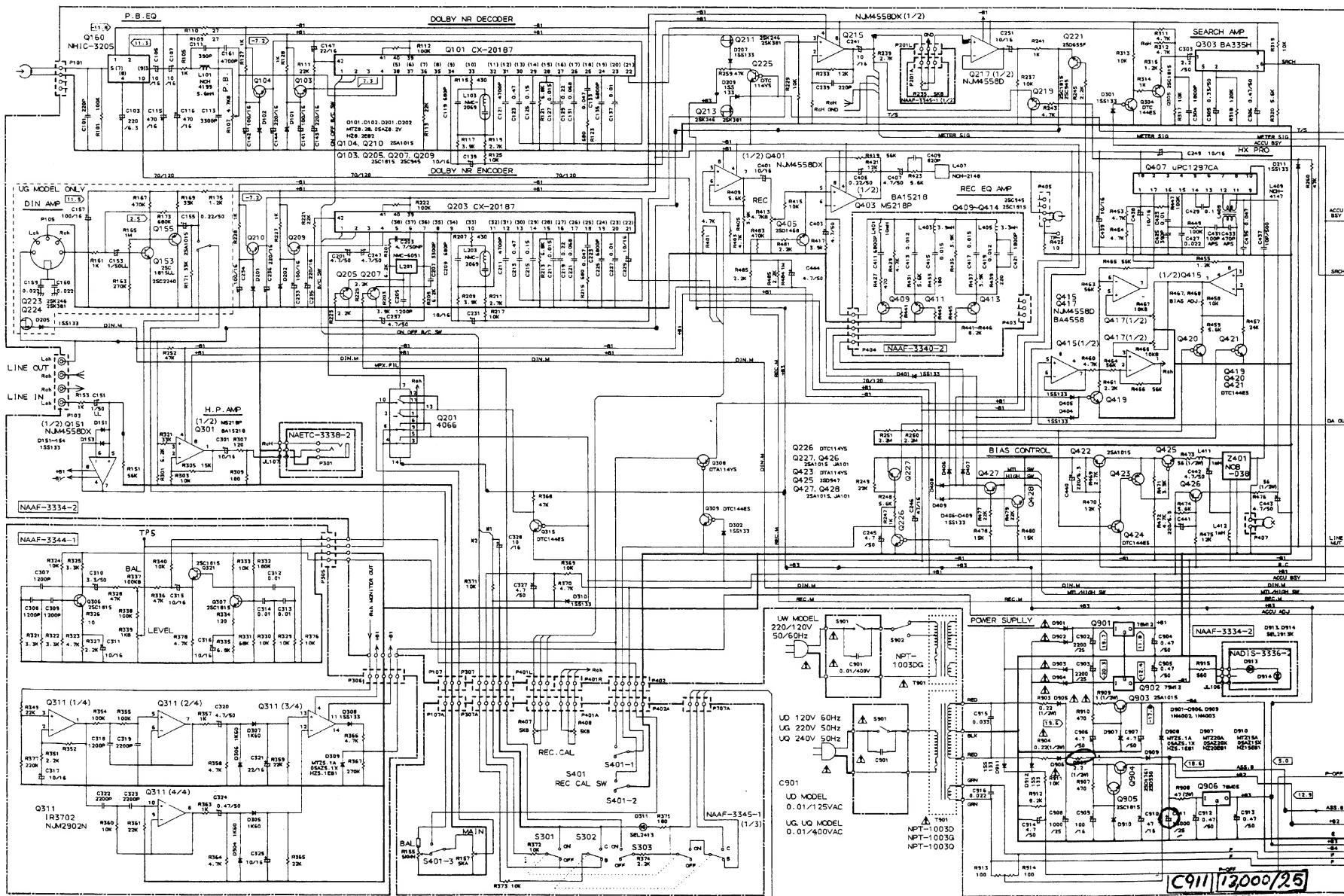
SCHEMATIC DIAGRAM (CONTROL SECTION) 2/2

—NOTES—

- THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- ALL RESISTORS ARE IN OHMS 1/4-WATTS UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μ F/50V UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS  ARE IN μ F/V.
- VOLTAGE (MEASURED WITH V.T.V.M.)  V IS DC VOLTAGE (NO INPUT SIGNAL)



SCHEMATIC DIAGRAM (AUDIO SECTION) 1/2



ONKYO CORPORATION

A B C D E F G H

TAPE MECHANISM-EXPLODED VIEW

